

REMARKS

The objection to the drawings under MPEP §608.02(g) has been obviated by the submission of corrected Figures 1 and 2 properly labeled as “Prior Art”.

The objection to the specification under MPEP § 608.01(b) has been obviated by amending the Abstract to have less than 150 words and to delete all objectionable phraseology.

The rejection of claims 1-4 under 35 USC §112, second paragraph, has been obviated by revising claims 1, 2, 3 and 4 to overcome the specific objections thereto detailed in paragraph 7 of the Office Action mailed September 29, 2008.

Finally, the rejection of claims 1 and 2 under 35 USC §102(b) has been obviated by revising these claims to more clearly distinguish the invention from the prior art relied upon in the rejection. However, before the specific language of the amendment is discussed, a brief recap of the principal features and advantages of the invention will be given so that the language of the amendment may be more fully appreciated. As indicated on page 2, lines 11-13 of the present specification, the principal purpose of the invention is to provide a small-sized limited slip differential having a high limited slip differential ability. To this end, the limited slip differential device of the invention employs a pressure generating device 20 filled with viscous fluid and having a cover gear 22 and a piston gear 25, as shown in Figure 8. When the viscous fluid is pressurized, the cover gear 22 and the piston gear 25 engage differential pinion gears 15, 16 and are displaced from each other along a longitudinal or vertical direction, as indicated in Figures 7 and 8, and described on page 10, lines 9-13 as follows:

“If the pressure of the oil is generated within the pressure generating device (20) according to the above operation, the oil pressure filled in the inside thereof pushes the piston gear (25) and simultaneously pressurizes the cover gear (22) to the both ends of in order to simultaneously push the first side pinion gear (14)and the second side pinion gear (13).”

The resulting hydraulic action advantageously provides a slip differential having a small-size and a high limited slip differential ability.

Claim 1 has been amended more specifically recite the hydraulic operation of the small-sized limited slip differential of the invention. Claim 1 now recites a frictional limited slip differential comprising a body section, a first side pinion gear arranged inside of said body section and connected with a driving shaft of a vehicle, a second side pinion gear rotatably connected with a driving shaft of vehicle opposite to said first side pinion gear, a pair of differential pinion gears, friction plates arranged at rear sides of said first side pinion gear and second side pinion gear, and a pressure generating device

“being filled with viscous fluid and having a cover gear and a piston gear, and being constructed such that said cover gear and said piston gear engage with said second side pinion gear and first side pinion gear, respectively, and can be displaced away from each other in a longitudinal direction of said device by a pressure of the viscous fluid pushing said second side pinion gear and said first side pinion gear, respectively.”

None of the references of record either discloses or suggests the frictional limited slip differential recited in amended claim 1. Specifically, in the Teraoka ‘750 patent publication, the right ring gear (47) is pressed rightward and engaged with the friction clutch (49) when the electromagnet (51) is excited (see paragraph [0049], lines 1-5 and FIG. 1A of the Teraoka ‘750 reference). Then, the frictional force brakes rotation of the right ring gear (47) and the braking force is transmitted to the left ring gear (57) (see paragraph [0049], lines 5-11 and FIG. 1A). If differential rotation is generated in this state, then relative angular displacement is generated between the left ring gear (57) and the left side gear (29). Consequently, differential torque is applied to the cam (13) such that the left ring gear (57) is displaced leftward, and the cone portion (69) of the left ring gear (57) is engaged with the friction surface portion (70) (see paragraph [0050] and FIG. 1A). By contrast, amended claim 1 recites a second side pinion gear (13) and a first side gear (14) that are displaced away from each other in a longitudinal direction by a pressure of a viscous fluid that pushes the second side pinion gear (13) and the first side pinion gear (14), respectively. In short, as the Teraoka ‘750 patent neither discloses nor suggests a frictional limited slip differential having a pressure generating device “being filled with viscous fluid and having a cover gear and a piston gear, and being constructed such that said cover gear and said piston gear engage with

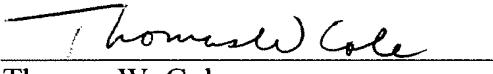
said second side pinion gear and first side pinion gear, respectively, and can be displaced away from each other in a longitudinal direction of said device by a pressure of the viscous fluid pushing said second side pinion gear and said first side pinion gear, respectively..., amended claim 1 is clearly patentable over this reference.

As claim 2 has been amended to include all of the previously discussed new limitations in amended claim 1, claim 2 is patentable for all the same reasons given with respect to claim 1.

As claims 3 and 4 were indicated as reciting allowable subject matter in the last Office Action, no further discussion of these claim is necessary.

As all of the claims are now believed to be in condition for allowance, the prompt issuance of a Notice of Allowance is hereby earnestly solicited.

Respectfully submitted,



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Attachments